

**Amendments to the Drawings:**

The attached sheet of drawings includes changes to Figures 5-7. These sheets of proposed amended drawings are being presented to the Examiner for approval. If approved, the Applicants will submit formal amended drawings at a future date.

In the attached sheets of drawings, Applicants propose deleting original Figure 5, renumbering original Figure 6 as Figure 5, and renumbering original Figure 7 as Figure 6.

Attachment: Three Annotated Sheets of Drawings Showing Proposed Changes

### **REMARKS**

The present Amendment is in response to the Examiner's Office Action mailed May 27, 2004. Claims 1-12 remain pending in view of the above amendments. Reconsideration of the application is respectfully requested in view of the above amendments to the claims and the following remarks.

#### **I. Objection to Drawings and Specification**

The Office Action objected to Figure 5 of the drawings for failure to include certain reference numbers and to the specification for inclusion of reference numbers that did not appear in the designated figures of the drawings. In response to these objections, Applicants have amended paragraphs [0088], [0090], [0118], [0120], [0121], and [0122]. In addition, Applicants have presented proposed amendments to the drawing for approval, which would delete original Figure 5, renumber original Figure 6 as Figure 5, and renumber original Figure 7 and Figure 6. Finally, paragraph [0049], which referenced Figure 7, has been deleted. These changes resolve the issues associated with the corresponding objections to the drawings and specification, which the Applicants request be withdrawn.

The Office Action objected to the specification for allegedly failing to provide proper antecedent basis for the claimed subject matter and indicates that claims 1-2, 5-6 and 10-11 are not properly supported in the specification. Other than this broad statement, the Office Action does not identify any specific portion of these claims that is purportedly not supported in the specification. In response to this objection, Applicants have carefully reviewed the terminology of these claims in comparison to the language of the specification. Based on this review, Applicants have changed "laser component" to "laser" throughout the claims, which is consistent with the terminology used in the specification. Other than this minor discrepancy, Applicants have found that all other claim terminology is supported in the specification.

If the Examiner has other specific objections to these claims and could identify any other claim terminology that is not supported in the specification, the Applicants invite the Examiner to initiate a telephonic interview with the undersigned attorney so that any such terminology discrepancies could be remedied.

## **II. Rejection Under 35 U.S.C. § 112, Second Paragraph**

The Office Action rejects claims 1-12 under 35 U.S.C. § 112, Second Paragraph for indefiniteness. In particular, the Office action asserts that “a distance greater than 10 kilometers” (claim 1); “an elevated temperature greater than 25 degrees Celsius” (claim 2); and “optical data a distance greater than 40 kilometers” (claim 10) are unclear.

The asserted lack of clarity of these elements of the claim is apparently based on the fact that these recite open-ended numerical ranges. Applicants respectfully submit that it is well-established that open-ended numerical ranges are acceptable. As noted at MPEP 2173.05(c), “[g]enerally, the recitation of specific numerical ranges in a claim does not raise an issue of whether a claim is definite.” This general principle is further clarified at MPEP 2173.05(c), which indicates that open-ended numerical ranges present indefiniteness problems only when the open-ended ranges somehow are incompatible with other limitations in the base claim or dependent claims. In the present claims, the numerical ranges are clear on their face and do not contradict other elements of the claims.

The Office Action seems to express some question as to the meaning of the open-ended numerical ranges recited in these three claims. For instance, in reference to claim 1, the Office Action asks “what is a distance greater than 10 kilometers? Is it 10.5 kilometers?” In response to this query, the Applicants point out that a distance greater than 10 kilometers represents any distance other than those that are 10 kilometers or less. In other words, “a distance greater than 10 kilometers” means exactly what it says, without any lack of clarity. Claim 1 literally reads on any distance greater than 10 kilometers and literally excludes any distance that is 10 kilometers or less. To answer the query of whether 10.5 kilometers is a distance greater than 10 kilometers, the Applicants think that the Examiner will agree that clearly, 10.5 kilometers is greater than 10 kilometers. However, the use of a numerical range is a well-accepted claim practice that does not limit the scope of the claim to a single specific number. Thus, although 10.5 kilometers is clearly greater than 10 kilometers, claim 1 defines a numerical range of any distance greater than 10 kilometers, and is not limited to 10.5 kilometers.

In reference to claim 2, the Office Action asks “what is an elevated temperature greater than 25 degrees Celsius? Is it 25.5 degrees Celsius?” As an initial matter, Applicants note that the word “elevated” has been deleted in this paper. In response to this query, the Applicants point out that a temperature greater than 25 degrees Celsius represents any temperature other than those that are 25 degrees Celsius or less. In other words, “a temperature greater than 25 degrees Celsius” means exactly what it says, without any lack of clarity. Claim 2 literally reads on any temperature greater than 25 degrees Celsius and literally excludes any distance that is 25 degrees Celsius or less. To answer the query of whether 25.5 degrees Celsius is a temperature greater than 25 degrees Celsius, the Applicants think that the Examiner will agree that clearly, 25.5 degrees is greater than 25 degrees. However, the use of a numerical range is a well-accepted claim practice that does not limit the scope of the claim to a single specific number. Thus, although 25.5 degrees Celsius is clearly greater than 25 degrees Celsius, claim 2 defines a numerical range of any distance greater than 25 degrees Celsius, and is not limited to 25.5 degrees Celsius.

In reference to claim 10, the Office Action asks “what is a distance greater than 40 kilometers? Is it 40.5 kilometers?” In response to this query, the Applicants point out that a distance greater than 40 kilometers represents any distance other than those that are 40 kilometers or less. In other words, “a distance greater than 40 kilometers” means exactly what it says, without any lack of clarity. Claim 10 literally reads on any distance greater than 40 kilometers and literally excludes any distance that is 40 kilometers or less. To answer the query of whether 40.5 kilometers is a distance greater than 40 kilometers, the Applicants think that the Examiner will agree that clearly, 40.5 kilometers is greater than 40 kilometers. However, the use of a numerical range is a well-accepted claim practice that does not limit the scope of the claim to a single specific number. Thus, although 40.5 kilometers is clearly greater than 40 kilometers, claim 10 defines a numerical range of any distance greater than 40 kilometers, and is not limited to 40.5 kilometers.

To summarize, the basic principle used to determine whether claim terminology is clear and precise is found in MPEP 2173.02:

The essential inquiry pertaining to this requirement is whether the claims set out and circumscribe a particular subject matter with a reasonable degree of clarity and particularity. . . . [T]he examiner must . . . determine whether the claim apprises one of ordinary skill in the art of its scope and, therefore, serves the notice function required by 35 USC 112, second paragraph.

The claims in question use the well-established practice of numerical ranges and do so in a way that apprises one of skill in the art of the scope of the claimed subject matter. Thus, Applicants respectfully request withdrawal of the rejection of claim 1, 2 and 10.

### CONCLUSION

In view of the foregoing, Applicants believe the claims are in allowable form in view of the amendments and remarks made herein. In the event that the Examiner finds remaining impediment to a prompt allowance of this application that may be clarified through a telephone interview, or which may be overcome by an Examiner's Amendment, the Examiner is requested to contact the undersigned attorney.

Dated this 27<sup>th</sup> day of October, 2004.

Respectfully submitted,



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